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ORIGINAL LECTURES.

SICK-ROOM COOKERY.

BY MISS DODS.

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Reported for the Medical Times.

COOKING, considered as a fine art, is, as Dr. Johnson would say, "by no means unworthy the attention of men of genius and erudition;" but when, as an applied science, it is brought under contribution for the welfare of the sick, its capabilities for good can scarcely be disputed; even doctors agree upon this point. And among those who are not sick, the softening and ameliorating influences of a good dinner, well cooked, are sometimes exhibited to a notable degree, it is said, more especially in the male sex: hence the physiological observation, which has become common knowledge, that "the way to a man's heart is through his stomach."

Since Professor Blot departed, we no longer say, "They do these things much better in France," but we sit cheerfully at the feet of a representative of Mother England, Miss Dods, as with great skill, aplomb, and a gas-stove, she gives demonstrative lessons in the art which may not inaptly be called the Father of the Arts, and of which, as testified by her South Kensington diploma, she is mistress.

As the lecture on "Sick-Room Cookery" is a practical one of some hygienic importance, we give it, with the explanations, as nearly as possible in the words of the experienced and skilful teacher.

The first dish about which I will show you to-day is

RESTORATIVE JELLY.

As usual, I will give you first the various articles called for by the recipe. Pure isinglass, one ounce; gum arabic (powdered), one-quarter ounce; sugar, two ounces; port wine, half a pint (Imperial); cloves, half a dozen; half a teaspoonful of pure lemon-juice or extract of lemon.

Directions.—First put in a pitcher one ounce of isinglass; add to it one-quarter of an ounce of gum arabic (powdered);

next, two ounces of sugar, with half a teaspoonful of lemon-juice, and half a dozen cloves. Pour over this mixture half a pint of best port wine, which should be properly measured, and not poured directly from the bottle, as bottles are not made to contain an Imperial pint. Then cover the pitcher closely with brown paper, in order to retain the strength of the port wine, and set it aside for an hour to let the ingredients soak. Some persons allow the mixture to stand over-night, but it is apt to lose its freshness and become mushy. When the hour is up, put the pitcher into a large saucepanful of boiling water, and stir till the isinglass is completely melted; then allow the water to boil violently for a few minutes, and strain the jelly into a flat dish. When cold, the jelly should be cut into dice, so that it can be served to a patient and eaten by him without any exertion.

This restorative jelly is very nourishing in cases of extreme prostration, when the patient is unable to make the slightest exertion or is unconscious, as a small square may be slipped into the mouth, where it will readily melt, and so, passing down the throat, sustain life without the action of the patient. This preparation, however, is rather costly, as only the best materials should be used. Russian isinglass should be invariably preferred, although it may be made with the sheet. It will, however, keep for a year if put in a tin box and kept in a cool place. By taking a square of this jelly, pouring hot water over it, and allowing it to stand, it will, when cool, make a delicious drink for invalids.

The next dish is beef-tea. I shall show you how to prepare this most important article of sick-room diet in four different ways. Here is the recipe for the first or

QUICKLY-MADE BEEF-TEA,

which can be made in twenty minutes. Take any desired quantity of steak from the top part of the round, as this has less fat and more juice than any other part of the ox; remove every morsel of fat, and divide the meat into small pieces, cutting across the grain; put the meat in a dry saucepan, and allow it to sweat for five minutes over a slow fire, stirring occasionally to prevent sticking. This is how all beef-essences are prepared. After sweating for five minutes, you will find the meat

white in color and surrounded by a very rich nourishing gravy, which, in cases of great exhaustion, may be given in this form. But ordinarily you next pour over the meat its weight of cold water, allowing a pint of water to a pound of beef. Stir until the water boils; it must not boil again, but simmer gently for five or ten minutes, until all the juice is drawn out; then strain carefully into a bowl, and if there is a particle of fat on the top, remove it with a piece of brown, unsized paper. By this method you may take off every star of fat without wasting a drop of the beef-tea, as is done when using a ladle or spoon. In this way you may have strong beef-tea in twenty minutes.

You have noticed that I have said nothing about salt. It is because in sick-room cookery we never allow a grain to be used. In some cases of sickness, as, for instance, typhoid fever, salt is thought to act as an irritant, and therefore, on our sick-room cookery-days, salt is left out of our list of ingredients. Of course the nurse, if the condition of the patient allow it, may add a pinch when about to give the beef-tea.

A CUPFUL OF ARROWROOT.

I shall next show you how to make a cupful of arrowroot, and then how to turn it into a pudding. For a cupful of arrowroot there would be required a dessert-spoonful of arrowroot, half a pint of milk or water, and one teaspoonful of sugar. First, put the milk on in a small saucepan to boil; put the arrowroot and sugar into a basin, and mix smooth with a little cold milk; the instant the milk boils, pour it over the arrowroot, stirring all the time until it thickens, which, if the arrowroot is quite dry, will occur immediately; if, however, the fecula has been in a damp place it will not thicken, and will have to be turned back into the saucepan and stirred over the fire until it does. This latter plan is not so delicate, as arrowroot should never be boiled, if possible. Arrowroot should always be kept in a tin box, in a dry place.

ARROWROOT PUDDING.

For making this cupful of arrowroot into a pudding you will require two eggs, another teaspoonful of sugar, and half an ounce of butter. Separate the whites from the yolks of the eggs, and beat the former into a stiff froth; the lighter they are

whipped the better. Nothing is so nice as arrowroot for giving nourishment. In itself it contains very little gluten, but it will often form the only means of making an irritable stomach retain food, or, if stimulants are required, it makes a pleasant vehicle, as, for instance, in giving brandy or wine, only in this case it should not be prepared with milk, but with water only. Having beaten the whites to a froth, I next drop into the thoroughly-cooled arrowroot the yolks and the teaspoonful of sugar, beating well; then drop in the whites, mixing very carefully so as not to break the grain of the froth; grease a small pie-dish with the half an ounce of butter, pour the mixture in, and set in the oven for five minutes, or just long enough to brown the top. If it remain longer, it will be heavy.

This arrowroot pudding is very nice for delicate children. In it there are two eggs, half a pint of milk, and the sugar, which form the actual amount of nourishment. Mothers should remember this who are in the habit of giving their infants boiled arrowroot made simply with water; they will starve on such diet, as there is hardly any nourishment, except what may be in the teaspoonful of sugar.

BEEF-TEA; SECOND FORMULA.

We shall now learn how to make beef-tea according to the second process, which is intended for cases of indigestion.

Take one-quarter of a pound of beef from the top part of the round, as in the first way; cut in small pieces, precisely as before, across the grain; then cover it with its weight of cold water,—that is, one gill,—and put it on a slow part of the fire to boil. It ought to take twenty minutes to reach the boiling-point, when it must be instantly strained and set aside to cool. All sediment falls to the bottom; the fat rises to the top, when it must be removed with a piece of brown paper, and the tea should remain the color of pale sherry, and be as easily digested as water. Beef is more nourishing than mutton, as in every pound of beef there are five parts more iron than is contained in mutton. For this reason we prefer, as a rule, to use beef in cooking for invalids.

WINE WHEY.—TWO RECEIPTS.

We next come to white-wine whey, for which you will require half a pint of milk,

one wineglassful of sherry, and one teaspoonful of sugar. Put in a small saucepan the half-pint of milk, with the teaspoonful of sugar, and place on the fire to boil. It must be watched carefully, in order to catch the exact instant it boils, when the sherry should now be poured in, and curdling takes place immediately; it should be strained through a piece of cloth, or a very fine sieve, and given to the patient as hot as possible. There is another wine whey made in the same manner, but requiring half a pint of sherry, the yolks of two eggs, and one teaspoonful of sugar. Beat the yolks with the sugar; put the wine on the fire, and when it boils pour in the yolks, well beaten; when it curdles, strain as before, and serve hot.

OATMEAL GRUEL.

I shall now teach you how to prepare gruel and porridge. For gruel there is required one half-pint of milk, a small tablespoonful of oatmeal, a small pinch of salt, one half-teaspoonful of sugar, and a piece of butter the size of a nutmeg. One never gives gruel to a very sick person, and therefore a little salt may be used. First, put the milk in a saucepan; then in a small basin the oatmeal and salt, and with a little cold milk mix smooth; after which, pour all into the saucepan of milk. Stir constantly over the fire until it boils, allowing it to boil for about five minutes; at the last minute add the butter and sugar. You may also grate a little nutmeg if desired, or port wine may be given, but in the latter case the gruel should invariably be made with water.

There are three kinds of oatmeal,—coarse, medium, and fine. The coarse requires a long time to prepare, and is rather heavy for an invalid; the fine has been ground and reground until it has lost much of its nutritive quality; so that I prefer the medium when making gruel for young children or any person with weak digestion.

PORRIDGE.

In making porridge, the oatmeal should be stirred in cold water, as that swells the grain. I generally allow about three tablespoonfuls of meal to a pint of water and a pinch of salt. After it comes to a boil, allow it to continue boiling slowly for half an hour. Some persons, I know, allow the porridge to cook for more than an hour, but this has a tendency to make it pasty,

and I think it is not as delicate or as palatable as when boiled only thirty minutes.

BROILED BEEFSTEAK OR CHOP.

While we are waiting for the gruel to boil, I will tell you how to cook beefsteak or chop. Take a piece of the best steak, an inch thick (I believe it is called porterhouse in this country), and beat it first with a rolling-pin. Never use a sharp substance,—as the back of a knife,—for that will cut the fibre, while the object of the round pin is to thoroughly soften the fibre without breaking it, thus retaining all the juice. Put the meat on a broiler, and keep it over a clear fire from seven to ten minutes; if over gas, once turning is sufficient, but if over coal, turn several times. Have ready a plate, as hot as possible; place the steak on it, with a pinch of salt, a little pepper, and a morsel of butter. In five minutes the salt and butter will have drawn out a rich gravy, which will be delicious as well as sustaining.

A chop should be cooked in exactly the same manner, except that seven minutes on the broiler will suffice.

BEEF-TEA: THIRD FORMULA—RAW BEEF-TEA.

We come now to the third method of making beef-tea,—what is called uncooked or raw beef-tea. Only a little of this should be made at a time, as it sours quickly. Take one ounce of beef at a time, and as soon as one cupful is given prepare the next. The beef, as I directed you before, should be from the top part of the round; this must be cut across the grain, and shred down with a knife. You see, as I scrape off the pulp, how the fibres show in white lines through the meat. For each ounce allow two tablespoonfuls of cold water. Let the meat soak for fifteen minutes, and then the water will be colored with the juice. Use no salt, as this is given only to patients in very low condition. In summer it should be given cold. Indeed, at any time, the colder it is the better; but if it should be desired, allow it to warm just enough to remove the chill, but on no account must it boil.

BEEF-TEA: FOURTH FORMULA—LONG-MADE BEEF-TEA.

While this is soaking, I will tell you of still another kind, which is called long-made beef-tea. It is used in India. Get two or three pounds of shin of beef; remove all the skin and the marrow from the

bone; cut the meat into small pieces, and have the bone broken up. Take also a knuckle of veal,—that is, just the knuckle-bone; have it broken up, and put all into a strong earthen jar. Place the jar in a large saucepan of boiling water, and tie the cover down with a piece of stout brown paper, using neither salt nor pepper. Let it boil slowly all day. When done, the jar will be filled with meat-gravy; strain this, and when cold it will be a strong jelly. In summer this may be served cold, and in winter pour hot water over a portion, and you have beef-tea. This will keep a week in summer, in a cool place, and much longer in winter.

ORIGINAL COMMUNICATIONS.

ABSCESS OF THE LIVER—OPERATION—RECOVERY.

BY CHARLES W. DULLES, M.D.,

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Read before the West Philadelphia Medical Book Club, March 7, 1879.

JUST at this time, when the subject of abscess in the liver is attracting considerable attention, when its diagnosis and treatment are being widely discussed, it has fallen to my lot to have a case where these points had to be practically considered, and which I think sufficiently interesting to justify its being made public. The case was as follows:

Charles B., a boy 12 years of age, four feet three inches high, weighing about eighty pounds, of slender build, and a lymphatic temperament, came under my notice December 25, 1878, in a condition of extreme jaundice. Of his previous history I could obtain no satisfactory details, but accepted the statement that since a short attack of diarrhoea, about two weeks before, he had been constipated and become gradually tinged with yellow, until he had reached the state in which I saw him. At this time his whole skin was of a rich saffron hue, and his conjunctivæ and the mucous membrane of his tongue and cheeks were stained with bile-pigment. Upon further examination I found, besides a coated and somewhat brownish tongue, only a slight degree of tenderness over the region of the liver and an apparent slight enlargement; to which, owing to the normal relatively large size of children's livers, I did not attach much importance. I concluded I had a case of congestion of the liver, and treated it with a purge of sulphate of magnesia, followed by the use of

twenty-minim doses of syrup of ipecacuanha four times daily, quinine two grains thrice daily, and every morning, on waking, an aperient of sulphate of magnesia, with sulphate of iron, in a considerable quantity of water. At the same time the boy was kept in bed. After a few days, on account of pain just below the lowest ribs, where they curve up to the costal cartilages, I had applied a blister four inches long and two wide. This drew well and healed nicely. To my satisfaction, it seemed to put an end to the pain, and the boy becoming less jaundiced, his urine and fæces appearing to have resumed their natural state, in ten days I allowed him to get up, supposing my care would not be needed further.

But three days later I was asked to see him again, because he complained of pain in his side. I thought I should find this due to the irritation of the seat of the blister by his clothing. To my astonishment, however, I found in the abdominal wall, just below the margin of the lowest ribs, a sensible bulging, about three inches across, a quarter of an inch perhaps in elevation, quite hard, and sensitive on deep pressure. I at once concluded that an abscess of the liver was forming,—an opinion which was subsequently concurred in by Dr. Ronaldson and Dr. Daniel Guitéras, who kindly examined the case for me.

I now put the boy again to bed, renewed the administration of quinine and the morning aperient, and had applied over the right hypochondrium cloths wrung out of hot water, with a little laudanum poured on,—these to be frequently renewed and kept covered with oiled silk. There was, I may here say, neither at this time nor subsequently, any appearance of jaundice, save the faintest possible trace of that which had previously existed. The tumor, however, increased until it was about four inches in breadth and had attained an elevation above the surrounding level of about three-quarters of an inch. In the course of a few days there was distinct, though limited and deep, fluctuation under the centre of the swelling, and, with the assistance of Dr. Ronaldson, on January 10, I removed, by means of an aspirator, about a fluidounce of pus; when the aspirator ceased to act. No anæsthetic was used, except, locally, the application of pure carbolic acid. This caused intense burning for a few seconds, after which the sensibility of the skin seemed to be entirely abolished. The pus obtained was very thick and grumous, looking more like broken-down liver-tissue than pus, and it coagulated with great rapidity. Its odor was very peculiar, suggesting to my senses that of Neufchâtel cheese. Microscopical examination, made in the pathological laboratory of the University of Pennsylvania, disclosed in it the presence of degenerated liver-cells (which were compared with some obtained from an hepatic abscess found in the course of an autopsy) and unmistakable crystals of

bilirubin. After the aspiration the tumor and pain were materially diminished, and the boy seemed to feel much better. Laudanum and lead-water were applied locally, and strict quiet enjoined.

On the 8th of January, two days before the aspiration, a careful physical examination had shown an area of percussion-dulness, extending from below the fourth rib, in the line of the right nipple, six inches downward, and from the spinal column round to within two inches of the median line of the abdomen, thus making a roughly quadrilateral figure corresponding to the presumed area of the enlarged right lobe of the liver. Extending from this towards the left, in front, was the dulness to be expected from a normal left lobe. Over the whole of the presumed right lobe there was great tenderness, which was most acute where the external swelling appeared.

The day after the aspiration, percussion and palpation seemed to show the area of dulness and sensitiveness to be diminished, and for a week the treatment consisted of absolute rest, soft food, quinine, the aperient before alluded to, and an occasional enema of water (a pint) with *tr. assafoetidae* (a fluidrachm), to secure the expulsion of flatus, which at times accumulated so as to demand attention.

On the fourth day the external tumor seemed to be recurring, and hot wet cloths were applied locally. The fifth day the boy was quite restless, his appearance clayey, his tongue furred, his pulse 96, the tumor more marked. I did not like the look of things now, and ordered whiskey (*f3ss*) in milk every three hours. The sixth day Dr. Stryker and Dr. Ronaldson saw him with me in consultation. We found his pulse 116, his tongue somewhat furred, the tumor increasing and presenting distinct fluctuation. It was then decided to operate for the evacuation of its contents the following day. The amount of whiskey to be taken every three hours was increased to *f3i*.

At 11 A.M. on January 17, the seventh day after the aspiration, in the presence and with the co-operation of Drs. Stryker, Ronaldson, and Judd, with the patient in the recumbent position, I opened the abscess with one thrust and cut of a straight bistoury. The tissues divided were of the thickness of half an inch, and the incision I made about two-thirds of an inch long. No anæsthetic was used,—a matter which I think was of some importance in favor of the patient, as avoiding the struggles inseparable from ether narcosis, and the consequent risk of rupturing the abscess. As soon as the incision was made, thick pus mixed with some blood poured out. The pus was flaky, and, after the first flow, slipped over the abdomen into a basin in almost detached masses, which quickly coagulated into a consistent and apparently homogeneous whole, amounting to about three fluidounces. Gentle and uninterrupted pressure was made

over the tumor, and care taken that the flow of pus should be steady and constant, so that no air should pass backward into the cavity of the abscess. After evacuating as much as possible by this gentle pressure, and without remitting it at all, a tent of twisted oakum was passed into the abscess to a depth of two inches, a thread attached to prevent its being lost, the incision covered with a large thick pad of absorbent cotton, and a binder placed round the body and pinned firmly.

The administration of whiskey and quinine as before was ordered, and ten drops of laudanum given. At 6 P.M. the patient was comfortable, without pain, his pulse 116,—the same as before the operation. That night he slept well, and the next day, January 18, his pulse was 100, his general appearance decidedly improved. On removing the tent, I evacuated—with the same precautions against admitting air as before—about an ounce of thick creamy pus mixed with some blood. A new tent was now put in, the near surface of the abdomen anointed with *ol. morrhue* (this only because olive oil was not at hand), and a small pad of absorbent cotton, soaked in the same, applied over and about the incision,—now a fistula,—and covered with a large pad of the dry cotton, while again the whole was firmly included in a binder. The same general treatment was ordered as before.

On January 19 his pulse was 112, his appearance still better, the external swelling apparently all gone, and very little local tenderness remaining. On removing the tent no pus escaped, only a little blood as if from granulation-tissue. The tent was washed in carbolic-acid solution, soaked in a mixture of equal parts of water and *tr. iodini*, and replaced, going in only about an inch this time. The dressing was renewed as on the day before, and the same general treatment ordered.

On January 20 his pulse was 80; his appearance very good. The evening before, he had had a difficult, straining passage of very dark, hard fæces, followed by two, softer and lighter. The tent and dressing were renewed as usual.

On January 21 his pulse was 92, his appearance continuing good; he had had two easy passages of soft, dark-brown fæces. I now removed the tent finally, leaving a shallow, healthy sinus, dressed this with absorbent cotton and a binder, and ordered chalk mixture (*f3i t. d.*) to quiet the bowels.

On January 22 his pulse was 80; he was in good condition every way; only a few drops of pus on the cotton. I dressed the closed sinus with adhesive plaster and a piece of lint coated with oxide-of-zinc ointment, covering in with an adhesive strap and a binder.

On January 23 he was better still; pulse 80; no tenderness on pressure; boy of a good healthy color. I made no change of the dressings, and permitted him to be propped up a while in bed, preparatory to sitting up.

On January 24 I did not see him. From this time onward he improved steadily and quickly until, on January 31, he was fully convalescent, the wound healed and covered with a somewhat retracted cicatrix. At this writing, March 5, the boy is in very good health, the liver reduced to its normal size, and there remains no demonstrable evidence of what he has gone through, except the cicatrix, situated just at the point of the tenth rib of the right side.

Remarks.—Among the points of interest in connection with this case, one of the chief is the difficulty of diagnosis,—and first on account of the youth of the patient. Abscess of the liver is extremely rare among children; so rare that it was no surprise to me to find, in reading a reprint from the Transactions of the Philadelphia College of Physicians, of a case reported by Dr. Louis Starr in 1875, that there had entered his head the same question which had thrust itself before me, whether after all this really was an abscess of the liver. His patient was younger even than mine, being only 5 years old, and, like mine, had recently been under treatment for a trouble which excited no suspicion of what was impending. Further, in his case, the supposed cause of the abscess was quite remote, while in the case I have just recited the presumable cause—a blow with a base-ball received six months before—was so remote as to make its probability open to doubt. Again, the absence of severe constitutional disturbance before the opening of the abscess was noticeable in both cases, the diagnosis resting almost exclusively upon physical signs. These, however, were such as to leave, perhaps, no room for doubt as to the nature of the lesions; that is, there was, after a short period of localized and severe pain, the formation of a bulging in the abdominal wall just below the level of the ribs, accompanied by a steady increase of the area of dullness belonging to the right lobe of the liver, with pain upon deep pressure, the formation of pus, at first deep-seated, but gradually approaching the surface until evacuation was effected, when the tumor subsided, the area of dullness shrunk to its normal size, and the wound healed by a *retracted cicatrix*.

There can, therefore, I think, be no reasonable doubt that the diagnosis of liver-abscess was correct. None of the gentlemen who saw this case entertained any; and the result of the microscopical examination of the contents of the abscess al-

layed any suspicion excited by the unusually favorable issue.

In regard to the treatment to be adopted in cases of hepatic abscess there is little difference of opinion. Evacuation is to be practised so soon as there is good evidence that adhesions have formed between the viscus and parietes sufficient to prevent the pus entering a serous cavity. Some surgeons, however, look upon this more as a procedure to satisfy themselves that all that is possible has been done, than with any hope that it will materially benefit the patient. Others regard it as decidedly advantageous and often curative. Among these has lately appeared the name of Surgeon-Major M. C. Furnell, of Madras, who, in the *Lancet*, last December, gave an account of six cases, and some very useful hints in regard to the best way of operating. In this paper I find a very earnest dissuasion from facilitating the evacuation of the abscess by pressure. It will be remembered that in the case just given this was employed, and, I think, properly, for the abscess was of such a size and character that I entertained no fear that when emptied it would draw into itself air and the much-dreaded bacteria. More than this, I think, had it been larger, and more disposed to act as an air-pump, I should not have feared to empty it completely; for I would not have hesitated to trust to the straining power of cotton—so often used for this purpose in the experiments of students of spontaneous generation—to exclude all germs. At the same time, upon *a priori* grounds, I think it would be always advisable to evacuate such an abscess entirely, and if it showed an insuperable tendency to act in this way, to carefully practise upon it the method of hyperdistention so recently advocated by Mr. Callender in this country, injecting into it some bland antiseptic fluid and leaving in it as much as would naturally remain.

In regard to the use of cotton, I must express great faith in its efficiency, founded upon personal observation of its accomplishments, and strengthened by some recent remarks of Mr. Sampson Gamgee, who seems to have excellent reason for believing that scrupulous cleanliness, with cotton dressing, is quite as safe as, and much more convenient than, the complicated antiseptic method of Lister.

The advisability of inserting a tent to

keep open a place of exit for any accumulations is too obvious to need more than mention, nor will it require argument to demonstrate its superiority to a canula or any rigidly patulous tube. The question between a tent and an india-rubber drainage-tube was discussed in the case just narrated, and none of us had any reason to regret our decision in favor of the former.

Another point worthy of mention is in regard to the choice between the use of the aspirator and the plan of opening with a bistoury. Recent experiences seem to indicate beyond doubt that the aspirator is an inadequate instrument for evacuating these abscesses. Its proneness to become clogged, and the immediate sealing-up of the suppurating cavity after its withdrawal, render it unfit for evacuating any but the smallest and simplest abscesses. For this, Furnell (*loc. cit.*) strongly advocates the employment of a trocar and canula, after cutting through the skin with a knife. He used a good-sized canula, before withdrawing which he pushed through it a tent of lint. But I receive the impression, in reading his remarks, that he belongs to that school of surgeons which fears "bacteria" as Europeans of the Middle Ages used to fear "the Turk;" and the method of opening directly with a bistoury, if done with care and a proper regard for cleanliness, recommends itself on the score of simplicity, while it is, in the opinion of some of the best surgeons living, quite as conducive to the safety of the patient as more complicated and so-called antiseptic methods.

In concluding, I cannot omit alluding to the disparity between the amount of pus evacuated and the increased size of the liver at the time the operation was done. This was, as the event proved, due but partly to the proper tumor of the abscess, and also in part to the distention of the whole lobe in which the abscess was situated; so that, when the former was emptied and its damaging influence removed, the latter returned to its normal state without difficulty.

4041 LOCUST STREET.

CHEMISTRY OF GASTRIC JUICE AND URINE.

BY WILLIAM H. GREENE, M.D.

IT would be no easy matter to discover at the present day any new chemical facts concerning the composition of nor-

mal gastric juice or normal healthy urine, and I only propose calling attention to some points that seem to have been forgotten or, perhaps, never learned. It can hardly be expected that medical colleges shall graduate classes of physiological chemists, but it is a matter of some importance that the accuracy of facts shall be well established before they are given to students, many of whom have no facilities for verifying them, or even of consulting recognized authorities.

It is still taught, we hope to only a limited extent, that the acidity of the gastric juice is due to lactic acid. This error was introduced into physiology by Lehmann, and his admirers have followed him blindly, discrediting or ignoring all evidence to the contrary.

The chemistry of the gastric juice has been thoroughly studied by Schwann, Bouchardat, Claude-Bernard, Bidder and Schmidt, and a host of others. Gastric juice contains two active principles,—free hydrochloric acid and pepsin,—neither one of which is capable of fulfilling the functions of digestion alone, for, while water containing five-hundredths of one per cent. will dissolve certain albuminoid matters, the solution obtained is essentially different from that which results from digestion in a similar liquid containing pepsin. Pepsin manifests its peculiar properties only in acid solutions, and it has been shown that when natural or artificial gastric juice is exactly neutralized by an alkali, it becomes absolutely inactive upon albuminoid matters. The addition of a few drops of acid restores its digestive properties. Many acids may be employed, but all are not equally active: lactic acid is very energetic, and it was supposed to be the acid which exists naturally in the secretion.

That the acidity is due to free hydrochloric acid was first established beyond doubt by Schmidt. He determined the total amount of chlorine in gastric juice, and then the total bases,—calcium, magnesium, potassium, and sodium, and the sulphuric and phosphoric acids, and the ammonia. The sulphuric and phosphoric acids found are combined with the potassium, sodium, etc., and the remainder of the bases are combined with chlorine. The excess of chlorine represents the amount which exists in the form of free hydrochloric acid. The quantity of hydrochloric acid so calculated always corresponds

to the quantity which would be required to produce the acidity of the gastric juice, as found by a direct acidimetric determination.

There is no flaw in this method if the facts be as stated; and they have repeatedly been confirmed by the most able experimenters. The analysis is a difficult one, and could only be undertaken by an accomplished chemist and one who has great skill in quantitative analysis. It is not surprising, then, that any other should have obtained a doubtful result, and, turning to Lehmann's Chemistry, should have deemed it easier to confirm that author's statements. But it seems unpardonable that those fallacious statements should still be taught, since they have been entirely disproved.

It has been objected that when gastric juice is distilled hydrochloric acid does not pass over until the latter stage of the process; but it must be remembered that with albuminoid matters hydrochloric acid forms compounds which require an elevated temperature for their decomposition.

We do not know on whose authority is based the statement that the acidity of urine is due to lactic acid, but it has recently been taught in one of our schools as a fact beyond question.

Gorup-Besanez is a fair representative of the present state of physiology. (We have reference to the facts of experiment, and not to theory only.) He says, "The following substances must be considered as constant and normal constituents of human urine: water, urea, hippuric acid, uric acid, creatinine, xanthine, indican, calcium oxalate, vesical mucus, sodium and potassium chlorides, alkaline sulphates, sodium-acid phosphate, calcium and magnesium phosphates, small quantities of ammoniacal salts, traces of iron and silica, traces of nitrates and nitrites.

"Small quantities of ammonium oxalate, succinic acid, and traces of glucose have been found in the urine of healthy subjects, but it is not known in a positive manner whether these substances should be considered as constant constituents. The abnormal constituents of urine are albumen, glucose, inosite, lactic acid, and lactates, etc.

"Lactic acid is always present in diabetic urine, but it is but rarely found in fresh pathological urine."

We quote from Gorup-Besanez because

his work is the nearest at hand; other works of physiological chemists make the same distinctions between normal and abnormal urine.

Harley, in his in many respects admirable little book on "The Urine and its Derangements," includes lactic acid among the normal constituents of urine; but Mr. Harley is not a chemist, as is shown by his statement (page 21) that "the acidity of normal urine depends on the united presence of acid phosphate of soda, uric, hippuric, and lactic acids." (Page 120.) "Some think that the acid reaction of urine is chiefly due to the presence of the acid phosphate of soda; but, although it may conduce to, it is not the chief cause of, the acidity."

Pure uric acid in cold saturated solution is almost without action on litmus paper; its hot aqueous solution produces a wine color with litmus: hence the considerable acidity of urine could not well be ascribed to uric acid. Again, to neutralize the acidity of the twenty-four hours' urine, 1 to 1.5 grammes of sodium hydrate are required. The entire amount of uric acid eliminated in twenty-four hours rarely exceeds 60 centigrammes (Mehn); Harley gives 75 for a mixed diet. We will suppose 75 centigrammes of uric acid and 30 centigrammes of hippuric acid to be eliminated in twenty-four hours. The former would correspond to 35 centigrammes of sodium hydrate (supposing neutral urate to be formed), and the second to 4 centigrammes. We would still have to account for an acidity equal to $\frac{41}{111}$ centigrammes of sodium hydrate, by far the greater portion of the total acidity. This acidity is produced by sodium-acid phosphate, as all chemists of eminence admit.

As regards lactic acid, Mr. Harley does not explain himself. We will therefore quote from other authors:

"The presence of lactic acid has been noticed in urine, not in a state of health, but in certain diseases in which digestion and respiration are much deranged."—*Chimie médicale appliquée aux Recherches cliniques*, MEHN.

"The appearance of lactic acid in the urine after poisoning by phosphorus has a certain importance in diagnosis."—GORUP-BESANEZ.

"Lactic acid does not exist in urine; it has only been found in minute quantities when its formation in the urine has been

permitted, for in time urine may undergo a lactic fermentation, especially if it contain sugar."—RABUTEAU.

CASES OF FOREIGN BODY IN THE ORBIT HAVING PASSED THROUGH THE EYEBALL.

BY P. D. KEYSER, M.D.

FOREIGN bodies in the eyeball are not infrequent cases that come, in this age and region of factories, iron-working, and sporting with shot-guns, before the ophthalmic surgeon; but when found in the orbit, after having passed entirely through the ball, these are of such rare occurrence that when one does appear note thereof should be made. With this fact in view, I present the following two interesting cases that have come under my observation within the past twelve months:

Case I.—Jordan Lawrence, æt. 18, was returning from his work in the mills, at Manayunk, about 5 o'clock in the afternoon of March 2, 1878, and, passing by where there was a match at pigeon-shooting, stopped to look on for a moment or two, considering himself entirely out of the range of the gun; but on turning round to look at the bird as it jumped up from the trap, it flew immediately over towards him, and at the same moment the gunner fired. The shot scattering, he was struck on the ear and side of the nose, and one penetrated the cornea of the right eye, making a horizontal incision, and tearing one-half of the iris from its ciliary attachment.

The same evening he was brought into my office, and I found the eyeball filled with blood, the iris lying in shreds out of the corneal wound, and considerable swelling of the tissue and lids surrounding. Fearing the consequent trouble of sympathetic ophthalmia, enucleation was recommended as soon as the inflammation could be somewhat reduced.

Ice-cold cloths were laid over the eye continually until the ninth day after, when I enucleated the eye, Dr. Todd, of Manayunk, the family physician, kindly administering the ether for me.

After the removal of the ball, it was found that the shot had passed clear through the eye, making its exit about two millimetres externally from the optic nerve, and was encysted in a thickened tissue immediately behind the sclerotica, and attached to the outer capsule and sheath of the nerve (Fig. 1).

Case II.—Michael Holland, æt. 35, of Scranton, Pa., presented himself at my clinic, in the Wills Eye Hospital, on July 30, 1878,

with an obtuse angular wound through the sclerotica, on the inner side of the right eye, a little posterior to the ciliary body, in the space between the superior and internal recti muscles, he having received the same from a piece of rail-iron twelve days previously, while cutting a rail with a twelve-pound sledge-hammer, which he was driving on a chisel held by another.

The lens was clear and in place, behind which, with the ophthalmoscope, a stria of thick blood could be seen. Vision reduced to perception of light only.

Enucleation was recommended if the foreign body was in the eye, but as he was sure it was a large piece that struck him, and had dropped out, and as there was no inflammation, he determined to wait for further developments. He went home with the purpose to report on the first appearance of any trouble.

On February 18, 1879, he returned with the eyeball atrophied and much drawn in by cicatrization just where the wound was, the lens opaque, and a very slight sympathetic irritation in the other eye. He reported that he has had no pain in the eye ever since the injury, but in November last it commenced to water, and has continued to do so; at the same time the left eye felt a little weak,—that is, he noticed that he could not look at a bright light as well as formerly. This condition of the left eye has not increased any.

Two days after his admission in the hospital the eye was enucleated. During the operation, and after the optic nerve was cut, it was found that the ball would not come out as usual,—that something was holding it through which the scissors would not cut. On feeling with the finger, a foreign body was discovered, which, on removal with the eye, was found to be a piece of iron three-quarters of an inch long, lance-shaped, and a width of nearly a quarter of an inch at the base. It was encysted and attached to the sclerotica and along the outer sheath of the optic nerve (Fig. 2).

FIG. 1.



Dotted line, track of shot.

FIG. 2.



After the operation the other eye recovered its normal strength and vision in a few days.

1630 ARCH STREET, PHILADELPHIA.

RATTLESNAKE POISON.

BY J. F. RICHARDSON, M.D.

THE following case, which came under my observation a few years since, is reported from notes taken at the time, with the hope that if any of the *Times's* readers have met with a like singular case, they may be able to give some explanation of the (to me) strange phenomena.

Mr. R., æt. 48, of vigorous constitution, was bitten by a small, black rattlesnake on the second joint of the ring-finger of the left hand, on July 10. Within half an hour he drank one pint and a half of brandy, which under other circumstances would probably have caused almost fatal intoxication, he being strictly temperate in that respect. It, however, produced a slight intoxication, which passed off in a few hours. July 11, the hand and arm was greatly swollen to the shoulder; otherwise the case appeared to be doing well. Thus passed four days, he suffering some cerebral pain and malaise. July 14, he spoke of a feeling of soreness in the flesh of right hip, and on examination a jet-black spot, some two inches in diameter, was discovered, with elevation or thickening of the skin to the extent of about one line; edges well defined. During the next four days this discoloration extended up to a level with the umbilicus, completely around the body and down the lower extremities, disappearing at the toes last, when convalescence was established.

With this (to me) strange discoloration, which was at all times jet-black and solid (not spotted, as is sometimes observed after this class of toxæmia), came on great prostration and death-like sickness,—so great that syncope would occur on assuming the erect position. The treatment, after the first alcoholic stimulation, was wholly tonic and alimentative. Result, recovery.

Query, what gave rise to the discoloration? Was it an erysipelas, and the discoloration caused by the action of the poison on the pigmentary matter? If so, how?

HARPER, IOWA, March 10, 1879.

SIR WILLIAM JENNER has retired from the post he has filled for nearly thirty years at University College and Hospital. The *Lancet* says, "Both as a systematic lecturer and as a clinical teacher, Dr. Jenner proved himself without a rival, and all who have listened to him must admit that, for clearness of expression, facility of illustration, and for that highest form of eloquence which earnestness alone can give, he was unsurpassed in England or, probably, in any other country."

NOTES OF HOSPITAL PRACTICE.

EPISCOPAL HOSPITAL, PHILADELPHIA.

SERVICE OF LOUIS STARR, M.D.

Reported by Dr. D. J. MILTON MILLER, Resident Physician.

CASES OF CROUPOUS PNEUMONIA OF THE APEX OF THE RIGHT LUNG, OCCURRING IN AN ADULT.

L. W., æt. 22 years, mulatto, a sailor, of temperate habits, with no specific history, and with a good family record, was admitted to the men's medical ward of the Episcopal Hospital, on December 15, 1878.

Three days before admission, having been indisposed for a short time previously, he had repeated slight chills of about fifteen minutes' duration, pain in small of back and in right mammary region, diarrhœa, much thirst, and fever.

When admitted, he complained of frequent rigors, had a hot, dry skin, and a feeble pulse. There was a herpetic eruption on his lips, yellowness and injection of the conjunctivæ, and great drowsiness. His tongue was coated, his appetite impaired, and his bowels regular. There was frequent paroxysmal cough, attended with a scanty, tenacious, somewhat rusty expectoration, and productive of considerable stitch-like pain below the right nipple. Upon examining the chest, the following conditions were found. Left side.—Slightly puerile respiration at apex, with a few sonoro-sibilant rhonchi posteriorly; otherwise normal. Right side.—Anteriorly at the apex, increased resistance on percussion, tympanitic resonance, and cracked-pot sound. Auscultation revealed bronchial respiration and coarse, moist, crackling râles for three inches below the clavicle, corresponding to the area of tympany. In this position, also, there was pectoriloquy and increased vocal fremitus. Beneath the nipple, pleuritic friction-sounds were heard. Posteriorly, moist crackling at extreme apex; over remainder of chest, dry bronchial râles. Heart normal.

The urine was passed freely, was amber-yellow in color, and had a specific gravity of 1015; the chlorides were greatly diminished, and a faint trace of albumen was present.

The temperature taken in the axilla at 6 P.M. was 102° F. The patient was placed

upon a soft diet,—milk, beef-tea, and farinaceous preparations; twelve ounces of milk-punch (f*3*i to f*3*ii of milk) were ordered per diem; a mixture consisting of sweet spirit of nitre and spirit of mindererus was administered every three hours, and a poultice was applied to the right side of the chest.

December 16, 8 A.M.—There was no change in the physical signs. It was reported that he had slept well all night, and he was still very drowsy. Temperature 103°; pulse 104, full and bounding, and respiration 16 per minute. The pleuritic pain was not so marked.

6 P.M.—Passed the whole day in sleep, occasionally talking quietly to himself; had to be roused to take his medicine and food, but his relish for the latter was increased. When awake, was perfectly rational. Temperature 103°; pulse 108; respiration 16.

December 17, 8 A.M.—Slept well during the night. Temperature 98.5°; pulse 72, weak; respiration 20. The surface was covered with perspiration, and there was considerable general prostration. The tongue was cleaner, and the appetite better. There was much less tendency to sleep. The cough was less troublesome, and the sputa less rusty and tenacious. Dulness had supplanted the tympany at the right apex; cracked-pot sound could no longer be elicited; the respiratory murmur was less bronchial in character; the vocal resonance and fremitus less cavernous; and numerous subcrepitant râles were heard. The fever-mixture was suspended, and gr. xii of sulphate of quinia ordered in divided doses during the day. No other change was made in the treatment.

6 P.M.—Temperature 98°; pulse 68; respiration 18.

December 18.—Rested well during the night. Temperature 98.5°; pulse 64, weak and compressible; respiration 18. Physical signs but little altered. An examination of the urine showed a greatly-increased amount of chlorides and no albumen. A cotton jacket was substituted for the poultice, and gr. v of carbonate of ammonium administered every three hours, in addition to the other treatment.

December 19.—Continued improvement. Tongue clean, bowels regular, and appetite very good. Pulse fuller (68) and temperature 98°. Cough less frequent, with the

expectoration of frothy, somewhat yellow mucus. Pain in right mammary region still present. Percussion showed returning resonance over right apex. Auscultation revealed broncho-vesicular respiration and subcrepitant râles, on deep inspiration, at right apex. Friction-sounds still present beneath right nipple. Over rest of right lung, and on left side of chest, a few sonoro-sibilant rhonchi were audible. The diet was increased.

December 21.—Respiratory murmurs clear and normal at right apex. Slight pain in region of right nipple. General condition excellent. Temperature normal; pulse full and strong.

December 22.—Pain about nipple had disappeared, and the lungs showed perfectly normal physical signs.

December 23.—Observation ceased, as the patient asked to be discharged, considering himself well.

Remarks.—Croupous pneumonia of the apex of the lung, though a proportionately frequent occurrence in young children, is rather unusual in adults. This case is chiefly interesting on account of the very confusing resemblance which the physical signs bore to those of a phthisical cavity when the patient was first examined. Other features of note are the marked and protracted drowsiness, the comparative slowness of the respiratory movements, and the regular course of the pyrexia, the temperature falling, as nearly as can be estimated, on the seventh day of the disease, and remaining normal afterwards.

TRANSLATIONS.

PHLEGMASIA ALBA DOLENS IN A CHLOROTIC PERSON, OCCUPYING THE TWO LOWER EXTREMITIES SUCCESSIVELY—PULMONARY EMBOLISM—CURE.—M. Labat reports the following case (*La France Méd.*, 1879, p. 66): A flower-girl of 17, pale, anæmic, and badly nourished, walked, one day, an unusually long distance. In the evening her right leg began to swell, and by the end of two or three days the thigh of the same side also became swollen. Within the next week she had several attacks of epistaxis, and twelve days after the first appearance of the swelling she entered the hospital (November 3, 1878). Examination showed anæmia, with a cardiac murmur, loudest over the pulmonary artery,

but also heard at the apex; prolonged musical sound in the vessels of the neck. The right leg was swollen, cedematous, with little pain and no tenderness along the line of the large veins. A careful examination of the viscera of the thorax and abdomen showed no signs of disease which might cause cedema. There was no albumen in the urine. The cedema diminished until November 12; by this time it had about disappeared. On the night of the 12th, however, the patient experienced a pain along the left lower limb, which showed cedema. The next day, fever; pulse 132. Slight pain in the right side of the thorax. The swelling involved the thigh in the course of the next few days. On the 17th the patient was suddenly seized with pain in the chest and a feeling of suffocation, with tumultuous action of the heart and rapid breathing. Physical examination showed only a slight obscurity in the vesicular murmur of the right side posteriorly. The oppression lasted for some hours, but finally diminished. There was dulness over the lower right lobe posteriorly. In the succeeding days, all these symptoms, including also pain on pressure over the crural vein, disappeared, and the patient is now well, but anæmic. x.

CHRONIC PURPURA HÆMORRHAGICA, WITH ALTERNATE SYMPTOMATIC PARALYSIS.—Dr. F. Cavalie reports the following case (*Bull. Gén. de Thérap.*, 1879, p. 125). He was called to attend a boy 10 years of age, rather stout, and apparently well nourished, who, after having had headache for three days previously, was suffering with slight fever and loss of appetite. The next day the little patient had abundant epistaxis, lasting all day and part of the night, and coming on at intervals. The day following, the patient appeared almost exsanguinated; no headache; persistent fever; paralysis of the right upper eyelid, with external strabismus, and left hemiplegia; slight anæsthesia of the paralyzed parts; tendency to somnolence; purpuric patches over the surface generally, and particularly on the front of the chest. Cavalie concluded that the paralytic symptoms were due to ecchymosis in the brain, and gave a rather favorable prognosis. Astringents and iron were ordered, under which the condition of the patient improved, until at the end of a month his general condition was quite fair. He began to be able to open the eye, though the limbs con-

tinued in a paralyzed condition. Twelve months after the patient was first seen, his general condition was very good; the paralytic symptoms had almost entirely ceased, and the patient was able to drag himself about supported on canes; strabismus persisted. He had been under tonic and ferruginous treatment steadily. Purpuric patches continued to show themselves. Cold affusions were now added to the internal medication with great benefit, and after a long time—several years—all the paralytic symptoms disappeared; only the strabismus remained. Nevertheless, during all this time, and up to the date of Dr. Cavalie's communication, six years after the original attack, fresh patches or crops of patches of purpura continued to make their appearance from time to time. Dr. Cavalie has been unable to find a case of purpura so chronic as this, and desires to record it for that reason. x.

SYNDACTYLITIS — SUCCESSFUL OPERATION.—Gyergyai reports the case of an infant of 5 months, in whom the third and fourth fingers of each hand were joined together, not by a membrane, but by their entire thickness. Gyergyai operated after Lister's method, cutting between the fingers to their base, under salicylic- and boracic-acid spray, and using Esmarch's bandage, and, after the operation, approximating the edges of the wounds by sutures. The two fingers were then covered with a muslin bandage, and the whole hand covered with cotton batting impregnated with salicylic acid. By the end of the fourteenth day cicatrization was complete, and the bandages were removed. The operation was a great success.—*Le Mouvement Méd.*, 1879, p. 80; from *Cbl. f. Chir.* x.

THE rates of mortality in the principal foreign cities, according to the most recent weekly returns, were, in Calcutta 50, Madras 42, Paris 27, Geneva 26, Brussels 36, Copenhagen 23, Stockholm 22, Christiania 23, St. Petersburg 46, Berlin 27, Hamburg 27, Dresden 26, Breslau 28, Munich 33, Vienna 30, Buda-Pesth 39, Rome 30, Turin 34, Alexandria 34, New York 27, Brooklyn 21, Philadelphia 21, and Baltimore 23, per 1000 of the various populations.

THE Trustees of Rush Medical College have appointed Prof. William H. Byford, A.M., M.D., of Chicago, Professor of Gynecology.

PHILADELPHIA MEDICAL TIMES.

PHILADELPHIA, MARCH 29, 1879.

EDITORIAL.

JOHN MAYNARD WOODWORTH.

IN our editorial of last week, the actions of Supervising Surgeon-General Woodworth during the last winter were the subject of comment. When the editorial was penned, Dr. Woodworth was supposed to be suffering from a slight attack of facial erysipelas, but before the mails had carried the journal to subscribers, a sudden increase of his illness occurred and rapidly carried him off. He was born in Chemung County, New York, in 1837, but spent his youth and received his education in the State of Illinois. His early manhood was devoted to the pursuit of natural science, but in 1862 he graduated in medicine, and immediately entered the volunteer medical service, in which he rose to be Medical Director of the Army of the Tennessee. In 1871 he was placed at the head of the Marine Hospital Service, which, under his management, has been reorganized and much improved in efficiency. Dr. Woodworth was the author of various reports and papers, most of them upon topics connected with his department, but he has left very few memoirs of permanent value. He was essentially a man of action, and his important articles were chiefly of a character to induce action rather than to add to the stores of human knowledge.

In our recent editorial, we did not mean to magnify the Public Health Association at the expense of physicians not connected with that organization who were active in securing proper health legislation. Medical men, both within and without the District of Columbia, were so powerful that it would be impossible to unravel the influence which led to the final triumph.

PROCEEDINGS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

THURSDAY EVENING, JANUARY 23, 1879.

THE PRESIDENT, DR. H. LENOX HODGE, in the chair.

Tumor of the brain. Presented by Dr. CHARLES K. MILLS.

M. T., æt. 35, white, female, in 1875 had secondary syphilis. During 1876 she began to have spells of giddiness and staggering, and frequently-recurring general headache. January 7, 1877, she went to bed with a terrible headache, and three days later became paralyzed on the left side. She was confined to her bed for a month. Her bowels and bladder were paralyzed for three weeks. Double vision came on with the paralytic attack, and remained for several months. During the year from January, 1877, to January, 1878, when she came under my care, she had continued in about one state, as regards her general health. Her headache had ceased, and her hemiplegia had improved slightly, apparently under the use of iodide of potassium, which she had taken steadily.

Her condition was noted in January, 1878. She had left facial paralysis. She could not corrugate the left side of the forehead, nor close the left eye. She had left internal strabismus. The lower part of her face was drawn to the right, and her tongue, on protrusion, deflected in the same direction. Her enunciation was a little imperfect, but she was not aphasic. The uvula and soft palate turned slightly to the right. The left arm was paralyzed, and was carried semiflexed at the elbow. She could barely manage to elevate the entire limb to a horizontal line. With the left hand she could mark on the dynamometer 5°, with the right 35°. The left lower extremity was also paralyzed. When she walked, the left foot, which was kept turned outwards, was lifted from the floor with an effort of the entire limb, and came down again heavily. Farado-contraction was retained, but diminished, in the face, arm, and leg of the left side. Sensibility was diminished in the leg, but not in the face or arm. Hearing was impaired on the left side. Taste was preserved. Smell was defective, but the comparative condition of the sense on each side of the median line was not determined. She was easily excited and irritated. She had full control of her bowels and bladder. The right half of the body gave no evidences of true paralysis, but she seemed a little deficient in strength in the right arm and leg.

From January to August, 1878, but little positive change took place in the patient's condition. She went about the ward, and sometimes out of it, for a short time. She

tired very easily, and often went to bed for an hour or two during the day. On the whole, her paralytic symptoms improved slightly, so that she seemed to gain a little more power in the ocular muscles and in the arm and leg. The improvement, however, was not decided, not as marked as is seen in many old cases of hemiplegia under treatment. Iodide of potassium, in doses of ten or fifteen grains three times daily, was given almost continuously. No iodism was produced by the drug; and she said that she always felt better while taking it. She seldom complained of headache; but once in several weeks she would have an attack, which would last for a few hours. She thought that her head got worse when she did not take the iodide. Occasionally bromide of potassium and mild tonics were administered. Her bowels were carefully regulated by means of laxatives and purgatives. As her paralysis, during the period to which I am alluding, was not accompanied by irritative symptoms of any moment, electricity, both in the form of faradism and galvanism, was cautiously applied at intervals to the palsied muscles.

On the 26th of August she began to suffer with headache. Later, on the same day, vomiting set in, occurring at frequent intervals. Her bowels were constipated. A cathartic and bromide of potassium were ordered, and mustard derivatives were used to her feet, calves, and nape of the neck. Her headache increased, becoming agonizing, and she vomited frequently for two days and nights. On August 29 she became semi-conscious, and lost control of her bowels and bladder.

She began to perspire all over, but the sweating was much more marked on the right side than on the left. This tendency to unilateral sweating was first observed by the nurse August 30; and it was also noticed on the afternoons of August 31 and September 1, and on several subsequent occasions.

On the 30th of August her left eye began to inflame. Dr. E. O. Shakespeare, ophthalmologist to the Philadelphia Hospital, who took charge of the patient's eyes, has furnished me with the following notes made early in September:

"The left eye showed paralysis of the orbicularis palpebrarum and external rectus, and great congestion of the bulbar and palpebral conjunctiva, with a muco-flocculent discharge. The conjunctiva and cornea were insensitive, and there was necrosis of the lower portion of the latter. The iris and deeper parts were not sensibly involved. The right eye presented a normal appearance on external examination; its movements were unimpaired. Vision, as roughly tested, was good in this eye, but was not accurately measured. She had perception of light in the left eye. The ophthalmoscope showed the media of the

right eye clear, the outline of the optic disk moderately distinct, the central arteries a little contracted and bordered by a narrow, frosty streak, the veins about normal, the level of the disk about as usual, the papilla of a dirty reddish-yellow, more intense near the borders, and opaque. The retina and macula lutea were not much changed. The fundus of the left eye could not be seen."

When she passed into the semi-conscious or apoplectic state, on the 20th of August, the motor paralysis of the left side became more pronounced, the face, arm, and leg becoming completely helpless, and the loss of power in the ocular muscles more marked.

On September 6 she began to have some difficulty in swallowing, which lasted for a few days. Fluids would be partly regurgitated. The same day, on attempting to feed her, she had a slight convulsive twitching or spasm of the muscles of the mouth, and of the hands and arms, and on two or three occasions subsequently, similar spells were observed. She never, however, had a well-marked convulsion, either unilateral or general.

For four weeks she remained in a low, helpless condition, sometimes rallying a little. Some paralysis seemed during this time to take place on the right side of the face and body.

On September 27 she showed decided signs of amendment, her pulse, temperature, inflamed eye, and general condition improving. She now complained greatly of pain in the left arm and leg, particularly on moving or handling them. The left knee-joint was especially painful. Both the left arm and leg were hyperæsthetic. She cried and worried. She talked very indistinctly, but by attentively listening much that she said could be understood. She regained control of her bowels. She continued somewhat better for four weeks, but varying considerably in her mental and physical condition from day to day.

On the 30th of October she became much worse, losing power on both sides of the body, and having involuntary passages. Her articulation became so low and indistinct that she could not be understood. She moaned almost continuously, and indicated that she had severe pain in her left arm and leg. She had some muttering delirium. She retained sufficient sight in her right eye to recognize faces and follow the movements of those around her up to a few days before her death, which occurred, from exhaustion, November 18, 1878. Symptoms were treated, and every effort was made to sustain her strength and prolong her life.

A post-mortem examination was made twelve hours after death. No cicatrices, extravasations, or unusual appearances were observed in the soft parts covering the skull. The left eye was found to be turned inwards, slightly

more than the right; and the lower two-thirds of the left cornea showed opacity and ulceration. A scar about three inches long, and one to one and a half inches wide, was present on the inner side of the left tibia. The skull-cap and dura mater were normal. The pia mater presented nothing abnormal, except a small area of injection and cloudiness about the middle of the parietal lobe. The cerebral substance on the upper surface of the brain was of average consistence.

The brain was removed from the cranial cavity with care, and was immediately turned over, so that the base could be first examined.

The dura mater and floor of the skull showed no evidences of disease or injury, the various fossæ, grooves, fissures, foramina, sinuses, ganglia, nerves, etc., having been examined as far as possible.

The base of the brain was remarkably distorted. Parts which are usually arranged symmetrically on each side of the median line seemed to have been pushed or dragged to the right. The right olfactory bulb was twisted out of position, so as to point obliquely at a considerable angle from left to right. The optic commissure and cut nerve-ends were swollen, and, with the corpora albicantia, were to the right of the middle line. How much of the distortion had occurred during or after removal of the brain from the skull could not, of course, be determined.

Just in front of the optic chiasm, the ends of two hard, pinkish-white nodules were seen, constituting what might be termed a twin-tumor. These masses were cuboidal in shape, and of about the same size, the sides of each measuring about two-thirds of an inch. They lay side by side, being distinct bodies, but were lightly bound together at their upper edges by thin fibrous bands. They were imbedded in, but readily separable from, the surrounding brain-substance, and did not appear to be connected with either of the membranes. They extended across the median line. On cutting into them they were found to be firm and uniform in consistence, but not difficult to incise.

The size and relations of the regions of the base of the brain in the location and neighborhood of the neoplasms were much altered, but they were so situated as to have apparently more or less involved in their growth the basal termination of the corpus callosum, the peduncles of the corpus callosum, the lamina cinerea, and anterior perforated spaces. They also probably encroached upon the roots of the olfactory nerves, the optic nerves and commissure, and the anterior portions of the circle of Willis.

The base from the posterior line of the tumor backwards to the pons was softened; optic nerve-ends, commissure and tracts, and the parts included in the interpeduncular space, actually melting away during the examination. The visible portions of both

crura cerebri to within a few lines of the pons were softened, but not so diffident as the interpeduncular bodies. The inner portion of the floor of the right Sylvian fissure, and the inner two-thirds of the island of Reil, were softened. The right temporo-sphenoidal lobe had the appearance of being lifted up or thrust away from the fissure. The circle of Willis seemed to have been broken by the obliteration of its anterior branches. The right middle cerebral artery appeared to have no connection with the vessels in front. On the left, the posterior cerebral, posterior communicating, internal carotid, middle, and anterior cerebral, were joined, but much bent out of their usual courses.

The third and fourth nerves were in position, but distorted. The pons, medulla oblongata, and cerebellum were normal in consistence and appearance, but somewhat out of line, in correspondence with the dislocation of the entire base.

Examination of the convolutions, both of the base and of the superior and lateral surfaces of the brain, revealed nothing abnormal.

On cutting into the lateral ventricles, a condition of distortion, equally remarkable with that at the base, was observed. The right corpus striatum and right optic thalamus appeared to bulge considerably, being above the level of the corresponding bodies on the left side. The third ventricle, instead of being a narrow, oblong fissure in the middle line, was wide, shallow, nearly square in outline, and twisted on its axis towards the left. A little fluid was found in the posterior cornua. The choroid plexuses were normal in appearance. Just in front of the distorted third ventricle, the top of one of the tumor masses could be seen.

The right lung was bound to the chest-walls by strong pleuritic adhesions. Within the middle lobe of the right lung was a hemorrhagic infarction, which was very hard, of a dark-red color, and about as large as a small lemon. Two spots of consolidation were also found in the right middle lobe. No valvular or other lesions were discovered on examining the heart. Liver, stomach, spleen, and kidneys showed no gross appearances of interest.

The eyes, with the attached portions of the optic nerves, were removed, and have been examined by Dr. Shakespeare, who reports as follows:

"Thin sections of the anterior third of the left eye showed the ciliary body and iris normal. The corresponding sclera also was free from infiltration. The pericorneal conjunctiva was inflamed below and congested above the cornea. The cornea itself, commencing at the junction of the upper with the middle third, was softened throughout two-thirds of its depth. Over this area the anterior epithelium, and the middle and outer layers of the fibrous tissue

of the cornea, were represented by a mass of embryonal cells, closely packed together. The posterior layers of the cornea were comparatively free from irritation. This condition of the cornea, commencing at the upper border of its middle area, extended down to the lower rim of this membrane. Over this extent its thickness was not much more than one-half that of its upper third, the loss falling mainly on the anterior layers. Corresponding portions of the right eye were normal.

"Longitudinal sections from both optic nerves at their entrance into the globes were made and stained with carmine. The sections included a half-inch of the anterior ends of the optic nerves, the optic disks, and a small portion of the surrounding retina. Under the microscope it was found that the sclera and choroid were apparently normal. The subvaginal space surrounding the nerve was not unduly enlarged; neither was there much proliferation of the connective tissue-bundles which are usually found in this space. The fibrous bands of the lamina cribrosa were much more abundant than normal, and were increased in thickness. The anterior layers of these bands were curved forward, so that they were located far in advance of their normal position, and the connective-tissue-cells upon them were more numerous and more swollen and granular than usual. The level of the surface of the optic papilla was not advanced; neither was the commencement of the granular layers of the retina much removed from the border of the scleral ring; nor were the nerve-fibres of the disk and retina swollen or degenerated. The capillaries here, however, were more numerous than usual, and their walls were slightly irritated. In the fusiform and irregular spaces between the nerve-fibres were small accumulations of embryonal cells. This cellular increase was more marked just within the border of the disk, and it extended backwards a little posterior to the level of the lamina cribrosa. The large arteries were seen to have their walls slightly thickened and their lumen a little contracted. The veins were not much changed and were not unusually distended.

"The condition of the optic nerve posterior to the lamina cribrosa was peculiar. Between the bundles of nerve-fibres was a very slight increase of cells in the lymph spaces, yet the bundles were not atrophied or unusually lessened in diameter, nor was the connective tissue between them increased in quantity. The vessels were not abnormally numerous or softened. Concerning the condition of the nerve-bundles themselves the following appearances were marked. At the posterior end of the sections, the presence of the so-called amyloid corpuscles in the thickness of the nerve-bundles was very frequent. Often several of these would form accumulations,

which would substitute the nerve-texture for more than half the diameter of a bundle of nerve-fibres, and destroy the continuity of the bundle to that extent quite as effectually as would the cut of a knife. No other degeneration of the nerve-bundles could be made out. This alteration of the bundles gradually subsided in proportion as the lamina cribrosa was approached, until near the latter it had entirely disappeared. The foregoing notes upon the condition of the optic nerves and papilla apply equally well to either eye."

Remarks.—This case simulated in many respects one of tumor, or other limited lesion, in the anterior part of the upper half of one lateral region of the pons varolii. The symptoms of circumscribed disease of this area, as given, for instance, by such authorities as Gubler, Brown-Séquard, Bastian, Nothnagel, and Seguin, are those of paralysis of both face and body upon the side opposite to the lesion. It is well known that in typical cerebral hemiplegia, that, for example, produced by affections of the main cerebral ganglia, facial paralysis is very incomplete; in particular, those branches of the facial nerve which supply the frontalis, corrugator supercilii, and orbicularis palpebrarum muscles escape. In hemiplegia from disease of the pons, however, the facial paralysis is usually well marked; and this is true whether the case be one of the so-called alternate hemiplegia from lesion of the anterior portion of the lower half of one lateral region, or one of unilateral paralysis of face and limbs of the same side from an affection of the upper half. Involvement of the orbicularis palpebrarum is considered an especially important feature of disease of the pons. Brown-Séquard, for instance, in one of the lectures so frequently delivered and published during the last few years, says that paralysis of the orbicularis palpebrarum, when central, occurs almost exclusively in cases of disease in the pons varolii.—(New York *Medical Record* for January 19, 1878.)

The internal strabismus from paralysis of the abducens or sixth nerve might also, perhaps, have been regarded as pointing to disease of the pons, as this form of palsy sometimes, although not commonly, accompanies the paralysis of the portio dura from central disease. The patient also suffered at an early period from slight, and later from very marked, difficulty in enunciation,—a symptom which Leyden has called *anarthria*, which is due to a paresis of the hypoglossal nerve, and is supposed to be characteristic of lesions of the pons and the medulla oblongata. Emotional weakness, anæsthesia of the leg, late implication of the trigeminal nerve, with apparent spreading of the paralysis to both sides of the body, might also, in connection with the other points referred to, have seemed to indicate a tumor of the pons.

While, however, the symptoms enumerated rendered the diagnosis of a localized lesion of

the pons at first sight highly probable, a closer study of the case during life afforded some points which made me doubtful as to the region affected. Conjugate deviation of the eyes and neck in disease of the pons generally takes place towards the paralyzed side of the body; in lesions elsewhere, the deviation is usually towards the side of the injury in the brain. This symptom was absent altogether during the time the patient was under my care. In a disease of the pons of such long standing as the one under consideration, convulsions would be likely to occur sooner or later. The urine was examined and found to contain neither albumen nor sugar, which are said sometimes to be present when lesions of the pons, either directly or by pressure, cause irritation of the floor of the fourth ventricle.

It must be remembered also, in discussing this question of the probability of the symptoms present in this case leading to the diagnosis of a disease of the pons, that the symptoms supposed to be pathognomonic of a lesion of this part, have been proved by clinical and pathological observation not to be so absolutely. A few cases are on record, for instance, in which the upper fibres of the facial nerve have been paralyzed as the result of a lesion situated in the brain, above the pons and cerebral peduncles. Chvostek, quoted by Nothnagel (*Ziemssen's Cyclopædia*, vol. xii. p. 118), describes a case in which disturbances of speech and a feebleness of the extremities on the left side, present at first, disappeared almost entirely after a few days; on the other hand, the left facial nerve remained almost completely paralyzed (even the branch to the orbicularis palpebrarum), and the autopsy disclosed the presence of a hemorrhagic cyst in the right nucleus lenticularis. The following explanation of cases of this kind is given by Nothnagel (*op. cit.*, p. 147):

"When the tract of nerve-fibres passing along the base of the nucleus lenticularis, designated as the *ansa peduncularis* (Hirnschenkelschlinge, Gratiolet, Meynert), is involved in the lesion, the character of the symptoms is somewhat different from that described. The most noticeable difference seems to be that in this case the fibres of the facial nerve supplying the frontalis and the orbicularis palpebrarum, which otherwise escape, are paralyzed like the rest, as in an instance reported by Huguenin."

The inflammation, ulceration, and sloughing of the left cornea, with the accompanying insensibility of the conjunctiva and cornea of the same eye, are matters of great interest, both to the neurologist and ophthalmologist. The present makes the second case in which I have observed inflammatory, trophic, and anæsthetic phenomena in the eye, in connection with tumors located in the anterior regions of the brain.

The Casserian ganglion and its branches did not appear to have been directly pressed

upon by the growths. These were, in fact, protected by being on a lower level, and by the peculiar conformation of the skull in this region. The base of the tumor was apparently on the level of the anterior fossa and the surface of the body and lesser wing of the sphenoid bone, and was therefore separated by position and by bony processes from the nerves and ganglion in the cavernous sinus and Casserian depression. Both the carotid and cavernous plexuses of the sympathetic nerve, however, communicate with each other, and with branches of the fifth nerve. The cavernous plexus is also connected with the ophthalmic ganglion. Filaments from both plexuses are distributed to cerebral and ophthalmic vessels, and must have been directly affected by the neoplasm.

The extensive softening of the base of the brain present in this case is worthy of attention. The softened tissue had much the appearance of the milky-white softening which, after the lapse of a long time, sometimes takes the place of yellow softening. Much of the softening must, however, I am inclined to think, have occurred during the last few weeks, or even days, of the patient's life. Although the softening which occurs around adventitious products is commonly considered to be inflammatory, I do not believe it to have been of this character, at least not entirely so in the present instance. Obliteration by pressure of the vessels which constitute or are given off from the anterior portion of the circle of Willis would better account for the process.

Extensive observations in general and cerebral thermometry were made in this case, but these will be reserved for another communication.

Report of the Committee on Morbid Growths.

—"The specimen presented by Dr. Mills proves upon examination to be a syphilitic new formation (gumma), histologically consisting of embryonic cells, round and fusiform in shape, imbedded in a granular fundamental substance. These elements are very distinct at the periphery, while at the centre of the growth they are indistinct and constitute a granular debris. At the periphery, also, are seen numerous blood-vessels having well-defined walls; in the lumen of many are found the red corpuscles of the blood.

"February 27, 1879."

Glioma of pons varolii.

Dr. WILLIAM PEPPER, who had seen the patient during life, presented the specimen, with the following history, based on the notes by Dr. T. V. CRANDELL:

M. A., æt. 5, a very healthy boy, became affected in July, 1878, with internal squint of left eye, and nightly paroxysms of excessive silly laughter. Two weeks later, slight paralysis of the right arm was noticed, which gradually increased and became associated with rigidity. This was soon followed by

weakness of the right leg, which increased until loss of power was nearly complete, and was attended with rigidity. During sleep, however, both arm and leg became relaxed. Difficulty in deglutition appeared early, and increased. There was paralysis of the left orbicularis palpebrarum and of left external rectus muscles; but the muscles of forehead and of face were not involved. The tongue was protruded straight, and could be moved from side to side, but not freely. The sensibility was not impaired at any point. Electromuscular contractility was present in all the paralyzed muscles. Speech was lost, apparently from difficulty in articulation. Intelligence was perfectly preserved till near the close. Sight was good in both eyes. Sense of smell and taste was good, as he objected to the taste of medicines, and had decided preference for certain kinds of food. Difficulty in swallowing increased, so that fluids were regurgitated through the nostrils; nutrition was, however, well kept up. In November he suffered from intense headaches, and frequent attacks of palpitation of the heart, with flushing of face and injection of left conjunctiva, and with increased rigidity of right arm and leg. There was temporary improvement in the state of the muscles of left eye, apparently due to the use of faradism. Death occurred from paralysis of the pneumogastrics on 29th November. The post-mortem examination was limited to head. Calvaria and dura mater normal. The sinuses were healthy. There was some congestion of arachnoid. About $\frac{3}{4}$ in clear serum escaped from the base of the brain. The ventricles of the brain were enlarged and distended with serum. All parts of the brain-tissues were healthy, excepting the pons, which had undergone gliomatous transformation. At first sight there appeared to be merely an irregular enlargement of the pons, as there was no distinct separable neoplasm. It measured 2.3 inches in transverse diameter and 1.5 antero-posteriorly. By its enlargement it had encroached somewhat on the cerebellum, which was compressed or hollowed out, particularly in the region of the left pneumogastric lobule. On section, the pons presented a smooth, glistening, homogeneous structure, resembling to a considerable degree the normal white substance of the hemispheres. It was less striated in appearance than the normal tissue of the pons, and had at the same time a more gelatinous or translucent appearance. Its consistency was quite firm on the right side; but on the left side there was hemorrhagic infiltration, with central cystic softening.

On microscopic examination, thin sections through the right half of the tumor, carmine-tinted, exhibited an infiltrate of small, round, and oval cells imbedded in a finely granular matrix. A few larger cells, epithelioid in appearance, $\frac{1}{1000}$ of an inch in one diameter and $\frac{1}{2000}$ in another, were also seen.

Sections from the centre of the tumor exhibited similar appearances. Sections through the left half of the tumor exhibited the same elements, obscured in places by numerous blood-corpuscles, which infiltrated this portion of the growth.

Remarks.—The existence of a tumor, probably of the pons, was clearly recognized before death. No cause could be suggested, unless repeated falls on the head might have induced it. There was no suspicion of inherited syphilis. The treatment throughout was by iodide of potassium and bichloride of mercury. A faradic current was applied to the paralyzed muscles, and a mild galvanic current was repeatedly used on the head.

Epithelioma of nasal fossa invading sphenoid and ethmoid bones and membranes of brain. Presented by Dr. WM. PEPPER.

Mrs. W. had suffered for several years from post-nasal catarrh, when, in 1876, at the age of 73, she consulted me, and on examination I found enlargement of tonsils and granular pharyngitis. Six months later (April, 1877), she first noticed a sense of fullness in the right side of the throat, causing frequent efforts to remove the obstruction, which brought away some muco-sanguinolent discharge from post-nasal space. The voice was a good deal affected. These symptoms had lasted a month before I again saw her, when examination showed that there was a rounded bulging downwards of the posterior part of the soft palate. On palpation it was firm and elastic. The finger passed behind the soft palate distinguished a rather firm, smooth, rounded growth springing by sessile base from outer wall of right nasal cavity and attached to soft palate. Various applications were made to posterior surface of the growth by means of bent brushes, but without effect. I then resorted to interstitial injections of solutions of ergotin, administered by passing the needle of the hypodermic syringe through the soft palate into the polypoid mass. Five grains were given each time, and the injections were repeated every three days for two months. This treatment was certainly followed by benefit. The sanguineous discharge ceased, the bulging of the soft palate diminished, and the sense of obstruction was lessened. She left the city in June, treatment was discontinued, and I did not see her till the end of September, when I found that during summer the nasal growth had increased, and that there had also been severe pain extending through the right side of the head. She had lost flesh and strength. There was marked increase in the deafness on right side, and she also complained of dimness of vision of right eye. The pain in head soon became incessant and violent, and the mental powers began to fail. The muscles of the right eye became partially palsied (see full account below), vision was apparently almost lost, and hearing entirely so on the right side. Dr. E. O. Shake-

speare, who visited her in consultation on November 15, has furnished the following note of the conditions of the eye:

"There was partial paralysis of the levator palpebræ superioris and of the orbicularis of the right eye, so that the upper lid could be only partly raised, and the lids could not be entirely closed. The lower margin of the cornea of this eye and the bulbar conjunctiva below were not covered during attempts at closure. There was complete paralysis of the external rectus of the right eye, and possibly a very slight paresis of the muscles supplied by the third nerve of this side. There was lessened sensibility of the integument of the right half of the face, as also of the conjunctiva and cornea of the right eye. The cornea was extremely hazy, particularly its lower half, where the anterior epithelium was opaque and slightly desquamating. The conjunctiva, both palpebral and bulbar, was in an acute catarrhal condition. The pupil was about normal, as was also the tension of the eyeball. Vision of this eye was so much reduced that she could with the greatest difficulty count fingers at one foot. In consequence of the haziness of the cornea it was impossible to obtain a distinct view of the fundus, and the condition of the nerve could not be definitely determined by the ophthalmoscope.

"The muscles of the lids and globe of the left eye were not perceptibly affected, nor was the sensibility of the skin, conjunctiva, or cornea appreciably blunted. The media were clear; the iris was normal in color and texture, and was somewhat sluggishly responsive to varying quantities of light. Acuity of vision in this eye was a little subnormal, and the visual field was sensibly narrowed concentrically. The ophthalmoscope showed the optic disk sharp-bordered and a little irregular in outline,—the irregularities being due to interrupted deposits of black pigment in the choroid ring and the edge of the disk. There was a deep and wide central physiological excavation of the head of the nerve, showing very distinctly at the bottom the glistening lamina cribrosa through which the central retinal vessels were observed to pass. The calibre of the retinal arteries was considerably narrowed and their perivascular sheath was unusually thick and distinct, being represented by a yellowish-white, frosty streak on either side of the blood-stream, of a width frequently quite equal to that of the latter. These vessels were not abnormal in their course.

"The large retinal veins also showed some of the same frosty bordering, but by no means so extensively. They were moderately full of blood, and were a little more wavy than usual, especially at a distance from the disk.

"The color of the whole of the surface of the optic disk between the previously mentioned central excavation and the choroid ring presented a dirty red-gray tint, and did not offer its usual semi-translucence. The general

level of the disk appeared to be a little below that of the surrounding retina.

"In the vicinity of the disk the retina appeared slightly striated, and scattered among the nerve-fibres were to be seen considerable numbers of minute, yellowish-white, opaque points and streaks.

"In the neighborhood of the macula these points became a little more numerous, but in this position their disposition was not at all radial. The same general character already mentioned for the blood-vessels of the nerve was to be seen, although less markedly, in the retinal vessels."

It was necessary to keep her continually under the influence of morphia, which was effectually done by means of hypodermic injections. She gradually sank into a state of mild dementia, in which she would partly arouse from the influence of morphia only to resume incoherent expressions of suffering. Death occurred December 15, 1877.

Dr. Shakespeare has also presented the following report of the post-mortem and microscopic examinations.

Autopsy.—"The brain only was examined. The external appearance of the cranial vault was not at all abnormal, nor was the thickness or color of the calvaria. The dura mater was readily separated from the inner surface of the bone upon the vault and sides of the cranium. Its tension was not unusual, and upon the convexity it presented nothing abnormal. The longitudinal sinus was partly filled with fluid and recently-clotted blood. Along the longitudinal median fissure this membrane was considerably adherent to the pia mater. The pial covering of the convexity of the cerebrum was possibly very slightly thickened. The Pacchionian bodies were somewhat prominent. The large vessels were moderately full of dark fluid blood, and presented no appearance of alteration. On removing the brain it was found that at the inner portion of the bottom of the right middle cerebral fossa, the membrane and the cerebral substance itself were firmly fastened to the base of the skull. Over the area of an inch at the apex or inner portion of this fossa, the greatly thickened dura was so firmly adherent to the bone that it could not be separated at this point. Here also the dura and pia mater were intimately united together and fastened to the corresponding cerebral substance, which was at this point indurated to the depth of a quarter-inch.

"This adhesion and thickening of the dura mater corresponded in location to the space on the floor of the fossa, between the foramina rotunda and ovali and the position of the right cavernous sinus, which latter was partly included within the thickened membrane. It reached anteriorly to the edge of the sphenoidal fissure, and posteriorly as far as the foramen lacerum medium.

"The dura was not unduly adherent to other

portions of the base of the skull, nor were there abnormal adhesions between the dura and pia mater other than those already mentioned.

"Viewing the inferior aspect of the brain, it was observed that the large vessels were not visibly altered. The right optic tract was slightly narrower than its fellow of the opposite side, but there was no marked difference in the size of the intracranial portion of the two optic nerves.

"The pial covering of the base was slightly cloudy, but not at all roughened, nor, except in the immediate vicinity of the already-described adhesion, was there any indication of inflammatory exudation. Beyond the neighborhood of the before-mentioned adhesion, the pia mater of the base was not unduly congested.

"Upon slight pressure some clear colorless fluid welled up from the infundibulum.

"An examination of the cortex of the brain revealed nothing unusual other than the previously-mentioned point of induration. There was a drachm or two of colorless serous fluid in the lateral ventricles; otherwise there was no naked-eye evidence of disease in any part of the cerebrum, cerebellum, pons, or medulla.

"Inspection of the base of the skull from the cranial cavity showed the cribriform plate of the ethmoid bone greatly softened. The whole of the body of the sphenoid and the anterior part of the basilar process of the occipital bone were in a similar condition. The softening had so far advanced that they were easily removed by a small scalpel, which could be plunged into them with as little resistance as would be offered by a piece of cheese.

"The cranial surface of these bones was nowhere the seat of fungous projections. There was not even abnormal alteration in level of the superficial part of these bones. The right ala majora of the sphenoid had undergone some softening near its junction with the body. So also had the apex of the petrous portion of the right temporal bone. The surface of section of the softened body of the sphenoid bone offered a grayish, opaque, granular aspect, and no juice exuded from it after moderate pressure.

"After breaking through the roof of the orbit, the posterior two-thirds of each eye, with its corresponding optic nerve, was removed and placed in a hardening agent. To the naked eye there did not appear to be an invasion of any of the tissues within either orbit.

"*Microscopic examination of the eyes.*—After hardening in picric acid a portion of the posterior of each eye, comprising the entrance of the optic nerve, some extent of the retina and ocular membranes and the optic nerve itself for a half-inch of its extent was properly prepared, and cut into thin sections, which were longitudinal to the axis of the nerve and vertical to the surface of the retina.

Nearly all the sections thus obtained were examined, but the four central cuts from each eye were mounted and more particularly studied. The latter showed the central vessels in some part of their course both anterior and posterior to the lamina cribrosa.

"*Right eye.*—The optic papilla was slightly swollen, and the granular layers of the retina did not begin at the margin of the choroid ring, but at a considerable distance beyond it. The veins and capillaries of the papilla and adjoining retina were a little distended, and their walls were thicker than usual. The arteries of the retina possessed a small contracted lumen and much thickened walls. Of the two large arteries of the papilla, one, near the lamina cribrosa, was nearly occluded by the apex of a blood-clot which extended backwards in the central artery behind the lamina cribrosa. The connective tissue between the nerve-fibres and that ensheathing the vessels of the papilla and adjoining retina was somewhat increased and slightly infiltrated with embryonal cells. There were no extravasations of red blood disks. The integrity of the nerve-fibres did not appear to be affected to any considerable extent. The lamina cribrosa was more dense than usual, and thicker from before backwards. In the large central artery behind the lamina lay the continuation of the blood-clot, whose anterior apex partly occluded one of the large arteries of the papillæ. This blood-clot was more or less fusiform, and extended nearly as far back as the entrance of the central artery within the nerve. Its diameter was about half that of the lumen of the vessel within which it lay, and its constitution indicated that it had been formed some time anterior to death, for many of the red corpuscles which it included had commenced to undergo granular degeneration. It was slightly adherent along one side of the arterial wall, where it had excited an irritation of the cells of the tunica intima. This irritation was apparent along the whole extent of the clot. The rest of the lumen of the artery and its large branches was partly filled with fibrinous clots, in which the red disks appeared to be unchanged. The capillary vessels in this part of the nerve presented walls slightly thickened. The bundles of nerve-fibres were not sensibly narrowed, and there appeared to be no degeneration within them. Neither was the connective tissue between them very much irritated or infiltrated. The pial sheath of the nerve was increased in thickness, and the subvaginal space, which was a little distended, contained a considerable increase of the fibrous bands usually found in it.

"*Left eye.*—The optic nerve and retina gave unmistakable evidence of an atrophy of the nerve-fibres consecutive to a marked sclerosis of the walls of the blood-vessels and their enveloping connective tissue.

"*Microscopic examination of the body of the sphenoid.*—Thin sections of this softened mass,

to the naked eye, offered a reticular structure with narrow meshes. Under the microscope the tissue appeared to consist of a stroma of fibrous tissue, limiting meshes usually large but sometimes small. Oval, round, or oblong in outline, these meshes were more or less completely filled with masses of epithelial cells closely packed together without any visible intercellular substance. At the periphery of these cell-clumps the cells were cylindrical, and, by their bases, rested perpendicularly upon the surface of the limiting stroma. Advancing from the periphery towards the centre of these cell-masses, the form of the cell changed from the cylindrical to the round cell, and finally to the discoid or flat squamous cell of the corneous layers of the epithelium of some mucous membranes. Frequently each of these forms of cell was applied upon the other two or more layers deep. Many of the cells, particularly those nearer the centre of the clumps, were undergoing mucous or colloid degeneration.

"The fibrous stroma limiting the cell-clumps in different points showed all the stages of transition from comparatively normal white fibrous tissue into embryonal tendinous tissue. The trabeculae carried all the vessels which were often embryonal, and which showed no tendency to project into the cell-clumps above mentioned.

"The morbid mass therefore very well represented the structure described by Cornil and Ranvier as a lobulated epithelioma with epidermic evolution."

(To be continued.)

REVIEWS AND BOOK NOTICES.

A MANUAL FOR THE PRACTICE OF SURGERY. By THOMAS BRYANT, F.R.C.S. Second American from third English edition. H. C. Lea, Philadelphia, 1879.

The sale of a second edition in less than three years is evidence of the professional estimate of this well-known treatise. The book is somewhat enlarged, much of it rewritten, and, to our thinking, improved. We notice also that eighty-eight new wood-cuts have been added.

THE SCIENCE AND PRACTICE OF SURGERY, INCLUDING SPECIAL CHAPTERS BY DIFFERENT AUTHORS. By FREDERICK JAMES GANT, F.R.C.S., Senior Surgeon to the Royal Free Hospital, author of "The Principles of Surgery: Clinical, Medical, and Operative." Second Edition, two volumes. Philadelphia, Lindsay & Blakiston, 1878.

In order to keep pace with the rapid advances that have been made in surgery in the last few years, both in Europe and in America, the author of this work has carefully revised and enlarged a second edition, which is now

offered to the profession in two medium-sized volumes. To bring the science and practice of surgery up to its present advanced state, Mr. Gant, in revising his text-book, has very wisely secured the services of some eminent specialists, who have contributed several very instructive papers on subjects to which they have given particular attention. Mr. Purves, of Guy's Hospital, has written the chapter on the "Ear;" Mr. Charles S. Tomes, one on "Dental Surgery;" Prof. Erasmus Wilson, one on "Diseases of the Skin." Mr. Wm. Adams, Dr. Morell Mackenzie, Dr. Robert Barnes, Mr. Wm. Rose, and Mr. Power, have each received Mr. Gant's grateful acknowledgments for original contributions on subjects on which they are considered high authorities. The article on the subject of inflammation contains a brief but lucid description of the sphygmograph and its use in determining the characters of the pulse in the different phases of the inflammatory process.

In regard to antisepticism in surgery Mr. Gant says, "I do not find in practice any unequivocal advantage from the antiseptic method of treatment; and I am disposed still to rely, as I have done for years with quite equal success, upon the security afforded by those general hygienic arrangements in regard to clean air and clean dressings which prevent the necessity of having recourse to any antiseptic measures. In short, I advocate what may be termed *presepticism* instead of *antisepticism* in the practice of surgery." This conclusion in regard to the relative merits of antisepticism is clearly in accord with the teaching of a majority of the English surgeons, especially of those who belong to the conservative school. The section devoted to the treatment of diseases of the genito-urinary organs is very full, and will be of much service to the practitioner in consequence of the many practical suggestions that it includes. Considerable space is likewise given to the consideration of diseases of the joints and their treatment by excisional surgery. It is well known that Mr. Gant has made special studies of these two subjects, viz., diseases of the genito-urinary organs and of the joints, consequently he has come to be considered one of the highest authorities in all that pertains to the management of these exceedingly troublesome affections. This fact will be sufficient apology for the apparent "undue prominence" that he has given to the discussion of these subjects.

The work has nearly a thousand illustrations,—over twice as many as the previous edition contained. The section on ligation of arteries is furnished with outline drawings that show the relations of the principal arteries in the different surgical regions, and the surface-lines indicating the points at which these vessels may be most easily ligatured.

Due credit has been awarded American surgeons for many valuable contributions to

the art of surgery. Indeed, no subject pertaining to surgery has been lightly treated in this work, for every page displays the familiarity with the literature of his department that the author of a text-book should possess in order that he may make it as instructive and as comprehensive as possible. C. T. H.

DIFFERENTIAL DIAGNOSIS, ETC. By F. DE HAVILLAND HALL, M.D. American edition, with extensive additions. Philadelphia, D. G. Brinton, 115 South Seventh Street.

We look generally with suspicion at new books on diagnosis, as we think that Dr Costa's great work has fully exhausted the subject, but by some parts of the above-mentioned little volume we have been agreeably surprised. In the chapter on fevers, the main differential points and the pathognomonic symptoms, wherever there are such, have been admirably well grouped together, and we see here for the first time, in a systematic way, special attention paid to the earlier signs of disease. The eruption in the roof of the mouth twenty-four hours before its appearance on the skin in eruptive fevers, and, in another chapter, the prodromic signs of a rheumatic, gouty, scrofulous, or tubercular diathesis, long before decided attacks clearly manifest the disease, are well given. But the poor nervous system! In multiple sclerosis we find the important fact not mentioned, that the disease often disappears apparently for a long time; in apoplexy due to embolism it should have been noted that unconsciousness is very transient or absent; myelitis is used in the old meaning of the word, including softening, and the different kinds of transverse, ascending, and other forms of myelitis, with their differential points, are not thought of. Bulbar paralysis is unknown to the author; spasmodic spinal paralysis, poliomyelitis anterior acuta, saltatory spasms, chorea, and other affections, he considers evidently of too little importance to mention. The chapters on the circulatory, respiratory, digestive, and urinary system merit almost as much praise as does the one on fevers, but we earnestly hope that, in case the book should live to see a second edition, the article on the nervous system will be totally rewritten. H. E.

GLEANINGS FROM EXCHANGES.

CASE OF INFLAMMATORY FUNGOID NEOPLASM.—Under this title, Dr. L. A. Duhring (*Archives of Dermatology*, January, 1879) gives a very minute and careful history of an extraordinary and extremely rare form of disease of the skin. The patient, a widow, 58 years of age, and enjoying good general health, had never before suffered with any disease of the skin, excepting an attack of

vesicular eczema in August, 1876. In October of the same year, the affection for which she consulted Dr. Duhring first showed itself in the form of a red spot, the size of a dime, on the right side of the forehead, not inflammatory, but looking like a superficial burn. This gradually increased in size, and by the end of ten months began to rise slowly above the level of the skin, when it assumed a purplish hue, and presented the appearance of a boil. There were no subjective symptoms. Other tumors, of a somewhat similar character, subsequently appeared over various parts of the body, sometimes coming and going, unlike the first, with great suddenness, nine coming upon the scalp in one day. Some of these gave rise to pain and itching. Dr. Duhring first saw the patient in October, 1877, since which time she has been continuously under his observation, the various tumors coming and going, some growing so large as to require operation for their removal. A careful description of the various lesions, their appearance at different periods, etc., is given in the original paper. Treatment has been thus far of no avail.

The microscopic appearance of the tumors, representations of which accompany Dr. Duhring's paper, shows ($\times 300$) the whole corium infiltrated with a new growth, the cells being more abundant in its deeper portions. The walls of the hair-follicles were also packed with neoplasm. The cells were homogeneous in character, not being nucleated, as a rule. Some of them had nuclei, but none more than one nucleus. There were no spindle-cells, so far as could be seen; nor was there any connective tissue or elastic fibre-bundles, as in normal skin.

Dr. Duhring regards the affection as not only new, but of such a grave character as to make it deserving of the closest study. There were two principal lesions,—the flat patches and the round tumor-like growths. The former were of various sizes, slightly elevated, dry, scaly, chapped-looking, and furrowed, and were followed by dirty-yellow pigmentation. The tumors varied in size from that of a split-pea to that of an egg, some being soft and others firm to the touch. They were either smooth and tense, or else had an excoriated surface, from which oozed serous and bloody fluid, and they were distinctly furrowed or lobulated. The subjective symptoms were principally itching, with occasional pain and a burning sensation. One of the most remarkable features of the disease was the exceedingly rapid development, and sometimes equally rapid disappearance, of the lesions, noted when the tumors underwent involution; pigmentations were usually left, but no permanent scars. Hebra first met with a case of this affection in 1872. He described it as new, and simply called it *neoplasma*. He met with a second case in 1874, which had been described by Hans Hebra

and Geber; and these Dr. Duhring believed were the only two cases on record.

DUBOISIN.—A new alkaloid has lately been extracted by MM. Holmes and Gertraud (*Bull. de Thér.*, xciv.) from *Duboisia myoporoides*, an Australian plant, belonging to the order Solanaceæ. This alkaloid is of a yellowish color. It is only soluble in water in the proportion of 1 to 120, but readily dissolves in alcohol, chloroform, ether, benzol, and bisulphide of carbon. The sulphate and bromide are its only crystallizable salts. The reactions of the sulphate are identical with those of atropia; in fact, the alkaloid is also closely allied in its physiological properties to the latter. It dilates the pupil even more actively than atropia. One milligramme dissolved in water and injected subcutaneously checks night-sweats efficiently, and Marmé has found that "if dogs are so far poisoned with morphia that the heart's action has fallen to two or three beats in five seconds, and the respiration has become irregular, the injection of small doses of duboisin beneath the skin immediately strengthens and accelerates the heart, and quickly renders the breathing regular." Hence duboisin would seem useful as an antidote to morphia. In frogs, the injection of one centigramme in aqueous solution produces tetanic convulsions after a variable period of from two to twenty-four hours. The price of duboisin is at present very high; it is advertised by Schering, of Berlin, at forty marks, or ten dollars, per gramme.—*Medical Times and Gazette*, February 8, 1879.

THE PHYSIOLOGICAL ACTION OF COFFEE.—Professor Binz has been making some new experiments on this subject. He found that very large doses not only raised the temperature, but caused death by convulsions; but the latter could be averted by artificial respiration. Moderate doses of caffeine raised the blood-pressure, the effect being the same whether the pneumogastric nerves are divided or not. Professor Binz has also examined the effect of caffeine, the name given by Boutron and Frémy to the volatile product developed in the coffee-bean by roasting, and he finds that it acts, like caffeine in moderate doses, as a stimulant to the brain, the heart, the respiration, and the heat-producing apparatus. He agrees with Hoppe-Seyler and Voit, that an ordinary infusion of coffee slightly increases rather than diminishes tissue-change. In any case, the influence it exerts in this direction is very trifling. The potassium salts contained in coffee are probably of no physiological importance.—*Medical Press and Circular*.

CASES OF EMPYEMA CURED BY ASPIRATION.—Dr. Joseph Hunt reports (*Med. Times and Gaz.*, February 15) two cases as follows:

Case 1, an infant of fourteen months, when examined showed dyspnoea, cough, night-sweats; no oedema, no rigors, no convulsions; much emaciated; temperature 100.4° (rectum). Weight after aspiration fifteen and

one-quarter pounds. Right side bulged; expansion deficient; vocal fremitus present, but weak; dull throughout, the dullness extending slightly over middle line; breath-sounds weak; no displacement of organs; pulse uncountable and scarcely to be felt. Aspirated, and four and a half ounces of sweet pus removed, and afterwards chest firmly strapped, from mid-sternum in front to spine behind. Three days later, good resonance in front to below nipple, and behind to middle of scapula, absolute dullness beginning at tenth interspace. Breath-sounds strong and healthy; temperature subnormal. Ordered vin. ferri, ol. morrhuae, aa ʒss ter die, and some gray powder. After this the patient progressed very favorably. When discharged, about a month later, the right side was slightly retracted, absolute dullness beginning in front at sixth rib, behind at tenth rib; but above this there was a considerable amount of modified resonance.

Case 2 was that of a man of 22, who complained of dyspnoea. His illness dated back nearly two years, and for some months previously he had had fluid in his pleura. He was much emaciated, and had a slight cough, with muco-purulent expectoration. There was no history of rigors, night-sweats or hæmoptysis. His evening temperature was 99.5°, being higher in the left axilla than in the right; respiration 28; weight, one hundred and twenty-six pounds. Left side excessively bulged, with obliteration of intercostal spaces; no expansion. Dull throughout, dullness extending at least one inch over the right margin of the sternum; breath-sounds inaudible; vocal fremitus and resonance wanting, except at the base behind, where some fremitus could be felt; apex-beat of heart felt just inside and below the right nipple; heart-sounds normal. Aspirated a few days later, one hundred and three ounces of fluid being removed. Severe dyspnoea. After aspiration the heart beat beneath the sternum. Ordered a mixture of quinine, iron, and sulphuric acid. For the next few days the temperature varied between 98° and 99°. Two subsequent aspirations were performed, dyspnoea following in each case to a marked degree. The patient suffered also from slight bronchitis in right lung. At the end of seven weeks the patient was discharged, weighing one hundred and eighteen pounds. Slight bronchitic expectoration; temperature slightly raised at night, but no night-sweats. With the exception that the breath-sounds were weak, the physical signs of the left side of the chest were normal. The chief points of interest were the frequent tappings to allow of slow and steady expansion of the lung, with the dyspnoea and cyanosis notwithstanding, and the difference of temperature in the two axillæ,—first higher in the left, then, when bronchitis supervened in the right lung, higher in the right.

MISCELLANY.

HARD ON THE INVENTORS.—The *Medical Press and Circular* speaks of a "new tractor for obstetric forceps," recently depicted in the pages of a contemporary, as "clumsy and dangerous enough," and as "perfectly antediluvian," but sinking into insignificance in comparison with the new forceps recently brought under the notice of the profession by Drs. Reed and Whittaker, of Glasgow. "The Patter," says the *Press and Circular*, "may be described as 'confused inventive genius, in mistaken hostility to maternal and infantile life.' These forceps are not likely to come into use during, at least, the next century."

OBITUARY.—During the past year, the time-honored *British and Foreign Medico-Chirurgical Review* died of old age and inanition. In addition, the *Medical Examiner* and *The Doctor* among English journals, together with the *Deutsche Zeitschrift für Prakt. Med.* and the *Archiv für Heilkunde* in Germany, departed, as an Irish journal says, "this life." These probably perished for lack of proper nourishment. The *Medical Examiner* appears to have shown symptoms of boulimia, having swallowed one hundred thousand dollars in two years.

"INQUIRENS" writes to the *Lancet* to know if such a university as the "American University and Medical College of Philadelphia," and said to be situated in Pine Street, exists, and is chartered by law. "And if so," continues "Inquirens," innocently, "what are the regulations for and expenses of obtaining degrees in medicine and dentistry?" "Inquirens" understands that a *sham* university of *similar name* did formerly exist, but that the above is, and has been for a number of years, a properly constituted college and school. Ah! no, dear "Inquirens:" it is only Monsieur Tonson come again; and, unless the present Assembly shall interfere with the "curriculum," you can still obtain a diploma under the former well-known conditions.

The President has nominated the following gentlemen to be members of the National Board of Health: Drs. S. M. Bemis, of New Orleans, La.; Henry J. Bowditch, of Boston, Mass.; Stephen Smith, of New York City; Henry A. Johnson, of Chicago, Ill.; James L. Cabell, of Charlottesville, Va.; T. S. Verdi, of Washington, D.C.; and Robert W. Mitchell, of Memphis, Tenn. As it was deemed essential that one homœopath should be on the board, we suppose Dr. Verdi is as good as any one else: there is little choice between nonentities. We believe that, on the whole, the composition of the board will be received with great satisfaction by the general profession. Let us wait results.

PROF. ALFRED STILLÉ has, at the earnest request of the Board of Trustees, withdrawn

his resignation of the chair of Theory and Practice in the University of Pennsylvania.

DR. ROBERTS BARTHOLOW has been elected to the chair of Materia Medica and Therapeutics in the Jefferson Medical College. We believe the selection a very wise one.

EXTEMPORANEOUSLY-PREPARED PLASTERS are rarely, if ever, satisfactory: indeed, we have frequently failed even with machine-spread. We think if our readers will try those of Seabury & Johnston they will be satisfied.

NOTES AND QUERIES.

DR. HORACE BINNEY HARE.

DR. HORACE BINNEY HARE died on Friday, March 27, at the island of St. Thomas, West Indies, of pulmonary consumption, in the 35th year of his age. Dr. Hare, after finishing a collegiate course at Harvard, graduated in the Medical Department of the University of Pennsylvania. He displayed great aptitude for chemical studies, following in this respect his grandfather, Robert Hare, and prepared himself especially as a teacher of chemistry and hygiene. In the winter of 1876 he was elected Professor of Hygiene in the University of Pennsylvania, but was prevented, by failing health, from fulfilling the duties of the chair.

As a teacher, Dr. Hare was comprehensive and clear. His own enthusiasm and exalted personal character always made him not only very popular with his classes, but roused even in his most dormant pupils a large measure of chemical enthusiasm. His original work was characterized by great thoroughness and candor, whilst the unusually complete preparation which he had gained by his studies here and abroad, and his manifest ability, promised for him a brilliant career both as a teacher and investigator. As a friend, Dr. Hare was one of those rarely unselfish and genial characters whose memory lingers through life as an incentive to noble deeds.

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY FROM MARCH 7 TO MARCH 22, 1879.

TOWN, F. L., MAJOR AND SURGEON.—To accompany the first detachment of recruits ordered to the Pacific coast, and, upon completion of this duty, to report in person to the Commanding General, Department of the Columbia, for assignment to duty. S. O. 58, A. G. O., March 11, 1879.

TILTON, H. R., MAJOR AND SURGEON.—To report to Commanding General, Department of the Missouri, for assignment to duty. S. O. 58, c. s., A. G. O.

DE WITT, C., CAPTAIN AND ASSISTANT-SURGEON.—To proceed to New York City, report in person to the President of the Army Medical Board for examination for promotion, and, upon completion of examination, rejoin his proper station. S. O. 58, c. s., A. G. O.

LAUDERDALE, J. V., CAPTAIN AND ASSISTANT-SURGEON.—Assigned to duty at Mount Vernon Barracks, Ala. S. O. 40, Department of the South.

DE LOFFRÉ, A. A., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—To report in person to the Commanding General, Department of the South, for assignment to duty. S. O. 58, c. s., A. G. O.

PORTER, J. Y., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Granted leave of absence for one month from first proximo. S. O. 41, Department of the South, March 7, 1879.

POWELL, J. L., FIRST-LIEUTENANT AND ASSISTANT-SURGEON (recently appointed).—To report in person to Commanding General, Department of Texas, for assignment to duty. S. O. 58, c. s., A. G. O.

ROSSON, R. L., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Dismissed from the service of the United States, to take effect March 22, 1879. G. C. M. O., No. 13, A. G. O., February 25, 1879.